

AMENDMENTS TO THE CLAIMS:

Please amend the claims as indicated below. The following complete list of claims replaces all earlier versions of the claims in this application.

1. (Currently Amended) A block polymer comprising
at least one first block and at least one second block that are incompatible with each other and that have different glass transition temperatures (Tg),
wherein the at least one first and second blocks are linked together via an intermediate block comprising at least one constituent monomer of the at least one first block and at least one constituent monomer of the at least one second block;
wherein said intermediate block is a random copolymer block;
wherein the block polymer has a polydispersity index I ranging from 2.8 to 6 ~~of greater than or equal to 2.5~~;
wherein the at least one first block has a Tg of greater than or equal to 40°C and is present in an amount ranging from 50% to 90% by weight relative to the total weight of the block polymer;
wherein the at least one second block has a Tg of less than or equal to 20°C and is present in an amount ranging from 5% to 45% by weight relative to the total weight of the block polymer;
wherein each of the at least one first and second blocks comprises at least one monomer chosen from acrylic acid, acrylic acid esters, methacrylic acid, and methacrylic acid esters;

wherein the at least one first block is totally or partially derived from monomers chosen from:

(a) methacrylates of formula $\text{CH}_2 = \text{C}(\text{CH}_3)\text{-COOR}_1$, wherein R_1 is chosen from linear and branched unsubstituted alkyl groups comprising from 1 to 4 carbon atoms, or R_1 is chosen from a C_4 to C_{12} cycloalkyl group; and

(b) acrylates of formula $\text{CH}_2 = \text{CH-COOR}_2$, wherein R_2 is chosen from C_4 to C_{12} cycloalkyl groups, and a tert-butyl group;

wherein the at least one second block is totally or partially derived from monomers chosen from:

(c) acrylates of formula $\text{CH}_2 = \text{CHCOOR}_3$, wherein R_3 is chosen from linear and branched C_1 to C_{12} unsubstituted alkyl groups, with the exception of the tert-butyl group, ~~wherein at least one heteroatom chosen from O, N and S is optionally intercalated;~~ and

(d) methacrylates of formula $\text{CH}_2 = \text{C}(\text{CH}_3)\text{-COOR}_4$, wherein R_4 is chosen from linear and branched C_6 to C_{12} unsubstituted alkyl groups, ~~where at least one heteroatom chosen from O, N and S is optionally intercalated;~~

and wherein the intermediate block is totally or partially derived from a combination of monomers chosen from monomers of types (a) and (b) above with monomers chosen from types (c) and (d) above, the monomers chosen from monomers of types (a) and (b) being interspersed with the monomers chosen from monomers of types (c) and (d).

2. (Cancelled).

3. (Original) The block polymer according to claim 1, wherein the at least one first block is totally or partially derived from at least one monomer wherein a homopolymer prepared from the at least one monomer has a Tg of greater than or equal to 40°C.

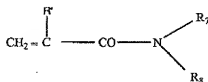
4. (Previously Presented) The block polymer according to claim 3, wherein the at least one first block is partially derived from monomers whose corresponding homopolymer has a Tg of greater than or equal to 40°C chosen from the following monomers:

- methacrylates of formula $\text{CH}_2 = \text{C}(\text{CH}_3)\text{-COOR}_1$

wherein R_1 is chosen from linear and branched unsubstituted alkyl groups comprising from 1 to 4 carbon atoms, or R_1 is chosen from a C_4 to C_{12} cycloalkyl group,

- acrylates of formula $\text{CH}_2 = \text{CH-COOR}_2$

wherein R_2 is chosen from C_4 to C_{12} cycloalkyl groups, and a tert-butyl group; and wherein the at least one first block is also partially derived from monomers chosen from (meth)acrylamides of formula:



wherein R_7 and R_8 , which may be identical or different, each are chosen from a hydrogen atom and linear and branched alkyl groups comprising 1 to 12 carbon atoms;

or R₇ is H and R₈ is a 1,1-dimethyl-3-oxobutyl group, and R' is chosen from H and methyl.

5-7. (Cancelled).

8. (Original) The block polymer according to claim 3, wherein the at least one monomer whose corresponding homopolymer has a Tg of greater than or equal to 40°C is chosen from methyl methacrylate, isobutyl methacrylate, and isobornyl (meth)acrylate.

9-17. (Cancelled).

18. (Previously Presented) The block polymer according to claim 1, wherein the at least one first block is a copolymer derived from at least one monomer wherein the homopolymer prepared from the at least one monomer has a Tg of greater than or equal to 40°C.

19-25. (Cancelled).

26. (Previously Presented) The block polymer according to claim 1, wherein the at least one first block is present in an amount that ranges from 50% to 70% by weight relative to the total weight of the block polymer.

27. (Previously Presented) The block polymer according to claim 1, wherein the at least one second block is totally or partially derived from at least one monomer wherein the homopolymer prepared from the at least one monomer has a Tg of less than or equal to 20°C.

28. (Cancelled).

29. (Currently Amended) The block polymer according to claim 27, wherein the at least one second block is partially derived from monomers chosen from:

- acrylates of formula $\text{CH}_2 = \text{CHCOOR}_3$,

wherein R_3 is chosen from linear and branched C_1 to C_{12} unsubstituted alkyl groups, with the exception of the tert-butyl group, ~~wherein at least one heteroatom chosen from O, N and S is optionally intercalated;~~

- methacrylates of formula $\text{CH}_2 = \text{C}(\text{CH}_3)\text{-COOR}_4$,

wherein R_4 is chosen from linear and branched C_6 to C_{12} unsubstituted alkyl groups, ~~where at least one heteroatom chosen from O, N and S is optionally intercalated;~~

and wherein the at least one second block is also partially derived from monomers chosen from:

- vinyl esters of formula $\text{R}_5\text{-CO-O-CH} = \text{CH}_2$

wherein R_5 is chosen from linear and branched C_4 to C_{12} alkyl groups;

- C_4 to C_{12} alcohol and vinyl alcohol ethers; and

- $\text{N-(C}_4 \text{ to C}_{12})$ alkyl acrylamides.

30-34. (Cancelled).

35. (Previously Presented) The block polymer according to claim 1, wherein the at least one second block with a T_g of less than or equal to 20°C is present in an amount ranging from 25% to 45% by weight relative to the total weight of the block polymer.

36-72. (Cancelled).

73. (Original) The block polymer according to claim 1, wherein each of the at least one first and second blocks is totally derived from at least one monomer chosen from acrylic acid, acrylic acid esters, methacrylic acid, and methacrylic acid esters.

74. (Cancelled).

75. (Previously Presented) The block polymer according to claim 1, wherein the difference between the Tg of the at least one first and second blocks is greater than 20°C.

76. (Cancelled).

77. (Cancelled).

78. (Previously Presented) The block polymer according to claim 1, wherein the at least one intermediate block has a Tg between the Tgs of the at least one first and second blocks.

79. (Cancelled).

80. (Cancelled).

81. (Cancelled).

82. (Original) The block polymer according to claim 1, wherein the block polymer has a weight-average mass (Mw) which is less than or equal to 300,000.

83. (Original) The block polymer according to claim 82, wherein the block polymer has a weight-average mass (**Mw**) which ranges from 35,000 to 200,000.

84-86. (Cancelled).

87. (Original) The block polymer according to claim 1, wherein the block polymer is not soluble to an active material content of at least 1% by weight in water or in a mixture of water and of linear or branched monoalcohols having from 2 to 5 carbon atoms, without pH modification, at room temperature (25°C).

88. (Original) The block polymer according to claim 1, wherein the block polymer is not an elastomer.

89. (Original) The block polymer according to claim 1, wherein the block polymer is a film-forming linear block ethylene polymer.

90-121. (Cancelled).